OPEN ACCESS Freely available online

Tremor and Other Hyperkinetic Movements

Video Abstracts

Severe Essential Tremor: Illustrative Videos

Evan A. Hale[1] & Elan D. Louis[1,2,3]*

[1]Department of Neurology, Yale School of Medicine, Yale University, New Haven, CT, USA, [2]Center for Neuroepidemiology and Clinical Neurological Research, Yale School of Medicine, Yale University, New Haven, CT, USA, [3]Department of Chronic Disease Epidemiology, Yale School of Public Health, Yale University, New Haven, CT, USA

Abstract

Background: Essential tremor (ET) can be profoundly disabling in severe cases; however, such cases may not often be encountered by general practitioners, primary care physicians, or general neurologists, leading to misdiagnosis.

Phenomenology shown: Severe kinetic, postural, and intention tremors in patients with ET.

Educational value: To provide visual examples of severe, long-standing ET for general practitioners, primary care clinicians, and general neurologists.

Keywords: Essential tremor, clinical, phenotype, severe, disability

Citation: Hale EA, Louis ED. Severe Essential Tremor: Illustrative Videos. Tremor Other Hyperkinet Mov. 2019; 9. doi: 10.7916/d8-hn37-y044

*To whom correspondence should be addressed. E-mail: elan.louis@yale.edu

Editor: Julian Benito-Leon, Hospital "12 de Octubre", Spain

Received: February 25, 2019 **Accepted:** March 12, 2019 **Published:** June 20, 2019

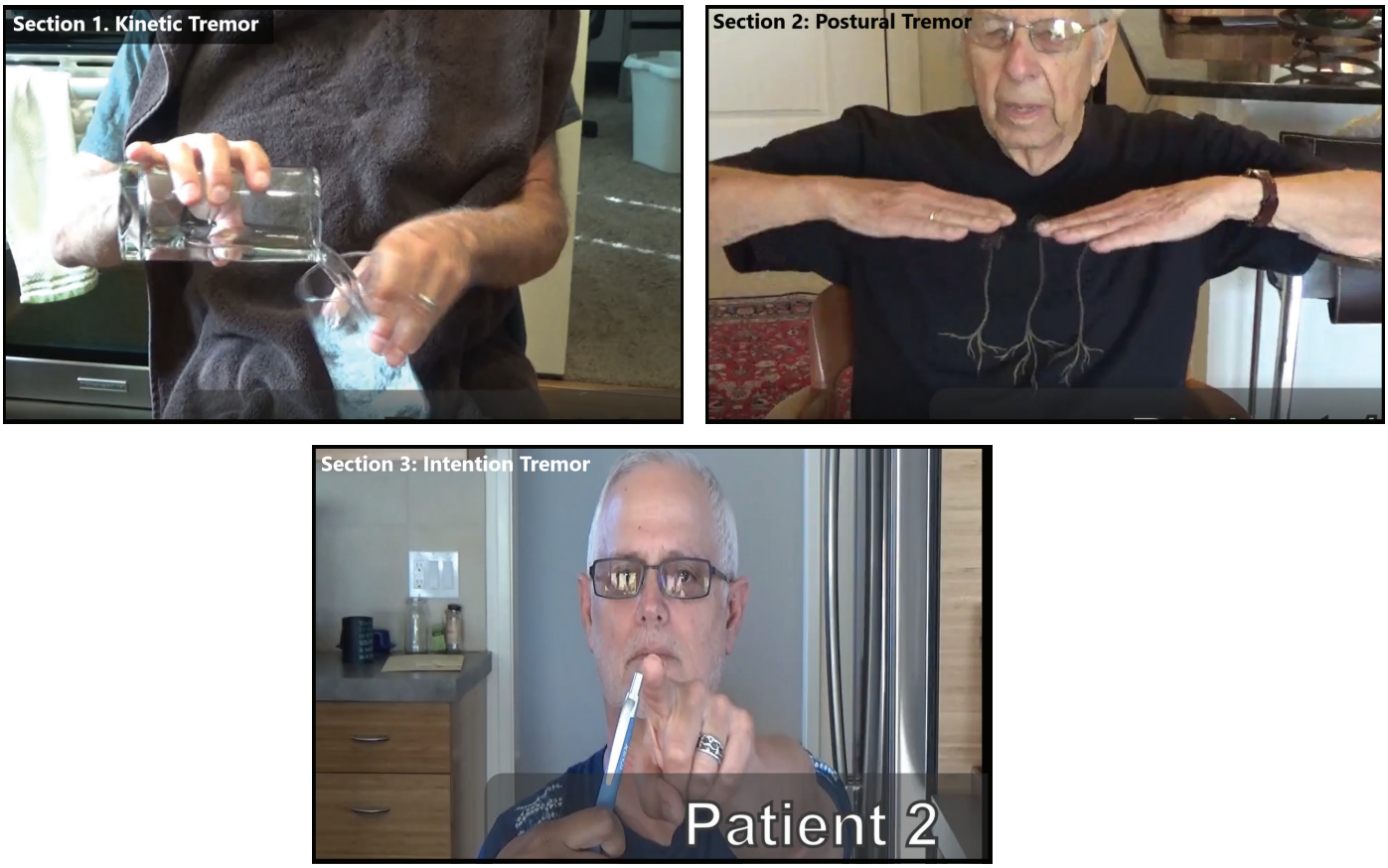
Funding: This research was supported by the National Institutes of Health Grants R01 NS073872, R01 NS086736, R01 NS088257, and R01 NS094607.

Financial Disclosures: None.

Conflict of Interest: The authors report no conflicts of interest.

Ethics Statement: All videos were taken of recent participants in research studies at Yale University and Columbia University. All studies were approved by the Yale University and Columbia University Institutional Review Boards, and all participants signed written informed consent forms. All the participants consented to publish their videos in professional journals.

Essential tremor (ET) is a chronic, progressive neurological disease that can range in severity from almost imperceptible shaking to extremely large amplitude tremor that profoundly impacts the ability to perform numerous activities of daily living. As the disease progresses, tremor increases in severity, a range of different forms of upper limb tremor (e.g., kinetic, postural, intention, and rest) emerge, and the tremor may spread from the arms to the neck, voice, or jaw. In a cohort of ET patients living with tremor for 40 or more years, one-third had tremor in at least two cranial structures, and the proportion of high-amplitude arm tremor reached 20.3% (e.g., while drawing spirals), 33.8% (e.g., while drinking), and 60.8% (e.g., while using a spoon).[1] We previously reported an ET patient whose jaw tremor was so severe that the patient suffered cracked teeth.[2] The view of ET as seen by many general practitioners, primary care physicians, or general neurologists may be of mild and "benign" cases.[3] They may see few severe cases, as these cases may preferentially self-refer to movement disorder neurologists and tertiary referral clinics. Indeed, in these severe cases, the tremor can become quite debilitating and incapacitating. We recently reviewed the published literature and were surprised to find that there were no published videotape examples of severe ET. Hence, while many clinicians may *know* that ET can become quite severe, they may not have *seen this* for themselves. To address this gap, here we present several illustrative videos of patients with advanced ET performing different aspects of a movement disorder examination, with the educational intent of tangibly demonstrating severe kinetic, postural, and intention tremor in the arms and hands.



Video **1. Examples of Severe ET – Section 1: Kinetic Tremor.** *Patient 1:* High-amplitude kinetic tremor is present in both arms, but even more so in the left arm, when this patient carries out the task of transferring water between drinking glasses. He frequently spills water. *Patient 2*: Severe right arm kinetic tremor nearly prevents this patient from being able to grasp a drinking glass. When he finally grasps the glass, water spills profusely. *Patient 3*: Severe right-hand tremor is apparent in this patient's Archimedes spiral. **Section 2: Postural Tremor.** In both patients, severe postural tremor is present in both arms when the wing-beating position is assumed, but it is worse on the left side, reaching an amplitude of several centimeters. Some patients with ET may exhibit mild dystonic posturing in an arm that has had long-standing and severe tremor. Patient 2 develops some flexion of the right thumb, which may be dystonic. **Section 3: Intention Tremor.** *Patient 1*: High-amplitude intention tremor in the right arm is seen during the finger–nose–finger maneuver. *Patient 2:* Severe intention tremor in the left arm manifests during the finger–nose–finger maneuver.

References

1.Louis ED, Gerbin M, Galecki M. Essential tremor 10, 20, 30, 40: clinical snapshots of the disease by decade of duration. *Eur J Neurol* 2013;20:949–954 doi: 10.1111/ene.12123.

2.Hernandez NC, Louis ED. Jaw tremor resulting in broken teeth: on the essential tremor spectrum. *Tremor Other Hyperkinet Mov* 2015;5:354 doi: 10.7916/D8T15339.

3.Smaga S. Tremor. *Am Fam Physician* 2003;68:1545–1552.